

# NRP Post

A quarterly publication of NASA Research Park

Summer 2006

## NASA Research Park Welcomes M2Mi

**M**achine-to-Machine Intelligence (M2Mi) Corporation, a world leader in the innovation and application of Semantic Web & Automated Intelligence technologies, offers four next generation deterministic Automated Intelligence products applicable to machines, software and humans.

M2Mi, via a “meta-data driven” architecture and supporting infrastructure, provides precision control and leveraging of machine assets, while enabling interoperability with industries leading custom and open management infrastructure applications.

*“Ames Research Center is delighted to have M2Mi in NASA Research Park. We see the tremendous potential for synergy and partnership with M2Mi as we meet the challenges of the Vision for Space Exploration. Ames will have a significant role in developing mission critical and ground support software to accomplish the Vision. We look forward to working with M2Mi to deliver new capabilities to the Agency in the years ahead,” said Dr. Steve Zornetzer, Ames Associate Director for Institutions and Research.*

*continued on page 2*

## SPACE PORTAL your Friendly Front Door to Commercial Space

**S**pace Portal, a consortium of NASA researchers, academia and non-profits, aims to facilitate agreements between space launch customers, launch providers and venture capital funding groups to help your science package get an “out of this world” ride.

Space Portal will be your concierge at the door to low earth orbit and beyond. Space Portal is actively engaged with the new commercial space launch industry revolutionizing access to space.

Visit the Space Portal crew in Bldg. 555, NASA Research Park, if you need lower launch costs for research rides to aid the development of your intellectual capital.

Welcome to NRP: Dan Rasky Lynn Harper, Mark Newfield, Allison Zuniga, Greg Schmidt, Beverly Girtten, and Andy Gonzales/ARC; James Grady/Alliance for Commercial Enterprises in Space (ACES), Bruce Pittman/Silicon Valley Space Club (SVSC)



Over 150 guests from NASA Ames Research Center and NASA Research Park attended a poster session August 3 to examine students' summer internship work results. New NRP partner, UNCF Special Programs Corporation, hosted both morning and afternoon sessions in Bldg. 3 with 47 summer interns exhibiting, including 18 interns from the NSTI-MI program.  
photography by Thomas Trower

## NASA Science and Technology Institute for Minority Institutions at NASA Research Park

**U**nited Negro College Fund Special Programs Corp. (UNCFSP) in partnership with NASA Ames Research Center, has launched a NASA Science and Technology Institute for Minority Institutions (NSTI-MI) headquartered at Silicon Valley's NASA Research Park (NRP).

*“We had over 20 undergraduate and graduate minority students engaged in meaningful research and engineering activities this summer, and look forward to future students and faculty working with NRP university and industry partners, and NASA scientists,” said Michael Hester, Vice President and COO of UNCFSP.*

*“I enjoyed sharing the excitement of being a scientist and working with students on technology development for NASA. I hope they'll choose a career in science and make a positive contribution to mankind. It's a privilege to possibly make a difference in their career choices,” said Cattien Nguyen, Senior Scientist, Code TSN.*

NRP is a nexus of government, academic and industry research. Locating Minority Institutions in NRP is a revolutionary opportunity for workforce development, allowing faculty and student researchers from minority institutions to connect and collaborate with the government, the private sector and other academic institutions.

*continued on page 6*

## NRP Welcomes New Tenants!

### Advanced Wireless Communications

Building 19 - August 1, 2006. Advanced Wireless Communications (AWC) provides carrier-grade wireless broadband connectivity.

### California Space Grant Foundation

Building 555 - June 1, 2006. California Space Grant Foundation (CSGF) works to advance the commercial development of low Earth orbit environment for all users (scientific, technological, and commercial).

### Inovamar

Building 19 - April 1, 2006. Inovamar LLC works with NASA to develop and market astrobiology life support systems.

### M2Mi

Building 19 - July 17, 2006. Machine-to-Machine Intelligence Corporation (M2Mi) is focused on break through innovations in the form of next generation deterministic Automated Intelligence.

### Protoflight, LLC

Building 19 - July 1, 2006. Protoflight, LLC was founded in 2006 to provide aerospace research and development services to emerging firms.

### Street Keys

Building 566 - August 1, 2006. Street Keys', LLC focus is in the automotive security R&D industry.

### TeleBrowse, Inc.

Building 19 - June 15, 2006. TeleBrowse, Inc., a software product developer, has developed a social networking product, TeleBrowse, allowing people to co-browse the internet by adding a toolbar to their browser.

### United Negro College Fund Special Programs Corporation

Building 19 - June 1, 2006. UNCFSP delivers programs to federal agencies addressing education and research infrastructure that include science, technology, engineering, and mathematics competencies.

### Zenpire Corporation

Building 19 - July 1, 2006. Zenpire provides yield enhancement and automation software and systems for semiconductor and flat panel manufacturing industries.

## NRP Welcomes M2Mi

*continued from page 1*

*"M2Mi is a partner-centric company, joining the NASA Research Park community enables M2Mi to benefit the entire entrepreneurial ecosystem, clearly we are delighted to be here. We provide Automated Intelligence for network facing applications that are life dependent and/or mission critical, which require autonomic intelligence to manage the balancing act between risk and complexity, a key factor in time and context sensitive environments" said CEO Geoff Brown.*

Developed in collaboration with Stanford University, DARPA and industry, M2Mi intelligent network systems software accesses machines at the native protocol level, and via sophisticated algorithms, automates critical features and functionality

for inter-machine communication. M2Mi has been used in telecommunications to determine fault and root cause analysis for large scale complex environments.

"Partnering with NASA and the related community, we will continue to bring to market technology allowing machines to operate autonomously, so that we humans can do what we do best - leveraging technology as an extension", said CEO Geoff Brown.

M2Mi recently signed a MOU with the Space Portal. M2Mi will occupy almost 5000 sq. ft. in Bldg. 19, Rms. 2020-2029 and 2063.

## Photozig Releases the Ultimate Digital Photo Album for Consumer

Photozig Inc. a NASA Research Park Partner since 2002, announced June 1, 2006, the commercial release of the Photozig(R) Albums v1.0 product line, the easy and fast solution for organizing and sharing digital photos and short movies with efficient web connectivity.

"You can easily find that special picture with quick search, tag photos, categorize albums, view digital photos in different ways, exchange full resolution images through the internet, drag/drop images from web browser to your computer, and much more," said Bruno Kajiyama, CEO of Photozig.

Users can download photo software at [www.photozig.com](http://www.photozig.com) and unleash the possibilities of the best digital camera technology.

## Good News for Changene Patent Process

Changene, an industrial partner of NASA Ames, announced that the United States Patent and Trademark Office (USPTO) has allowed claims in its patent application that broadly covers the nacrein molecule. The nacrein molecule was identified from *Pinctada Margaritifera*, a major pearl oyster inhabited in South Pacific Ocean. Nacrein has shown functions of pearl formation and osteogenesis. Following a 'Notice of Allowance', the final issuance of a patent involves several administrative steps that typically are completed within a few months.

Changene CEO Frank Chang said "This feat, the patent application as well as continuing research efforts, is the result of the hardwork of my colleagues. Particularly, NASA Research Park provides an unparalleled opportunity to the company. We look forward to having the final issuance of the nacrein patent application."

## NASA AND U.S. Forest Service Test Unmanned Aerial Systems (UAS) Wildfire Capabilities

by Ruth Marlaire



NASA Ames unmanned aerial system collaborative APV-3 vehicle, one of four such vehicles recently presenting a technology demonstration in King City, CA.

The UAV Collaborative at NASA Research Park joined researchers from NASA Ames Research Center and Forest Service experts in a technology demonstration at Fort Hunter Liggett Garrison near King City, Calif. to evaluate using advanced unmanned aerial systems (UAS) technologies to expand wildfire imaging and mapping capabilities.

The UAV Collaborative demonstrated a “Sense-and-Avoid Display System” (SAVDS), a ground portable radar system that provides situational awareness capabilities for low-altitude, long-endurance unmanned aerial systems. The high-resolution display shows a geo-rectified topographic base map overlaid with aircraft identification and positional information illustrating UAS location and speed, including the location and speed of return targets detected using a portable ground-based radar system. SAVDS enables UAS pilots to be fully aware of the local air traffic environment to ensure safe operations.

The demonstration event on June 6, 2006 exhibited platform and thermal imaging technologies, platform communications, data handling, autonomous operations and operations within a hazardous environment.

“First responders are interested in these new technologies to more easily, rapidly and accurately monitor wildfire conditions,” said Vince Ambrosia, senior scientist and principal investigator of the project at Ames. Ambrosia and other team members will evaluate selected UAS capabilities for suitability of aircraft operations and wildfire imaging and mapping.

NASA is interested in evaluating platform capabilities and sensor systems and showcasing NASA-developed technologies that are of benefit to other federal and state agencies.

The Forest Service is interested in evaluating UAS capabilities in an operational environment, collecting fire-related thermal imagery during a major event to help improve real-time information during a wildfire event. Four small unmanned aerial vehicles were present: AeroVironment PUMA, IntelliTech Microsystems’ Vector P, The Insitu Group’s Scan Eagle, and NASA Ames UAV Collaborative’s APV-3.

UAS participants demonstrated mobility, imaging and real-time air-to-ground fire information, and capabilities for effective flight and data gathering. Teams also assessed technologies for current and projected progress, possible integration and use in wildland fire management, and future testing needs.

For more information about NASA and the UAS program on the Web, visit: <http://www.nasa.gov/home>

For more information about the US Forest Service UAS program on the Web, visit: <http://nirops.fs.fed.us/UASDemo/>

### NRP Annual Summer Picnic



PhotoZig and NRP community enjoy food and music at the 2nd Annual Summer Picnic on August 2, 2006.



The Ames Jazz Combo delighted NRP guests with smooth jazz.

photos courtesy of PhotoZig, Inc.

## Bigelow Spacecraft Carries NASA ‘Genebox’ for Test in Orbit

by John Bluck

A NASA shoebox-size payload, called ‘GeneBox,’ is now orbiting Earth as a passenger inside Bigelow Corporation’s one-third scale, inflatable Genesis I test spacecraft.

*“The GeneBox test is the first of many planned projects from the newly formed Small Satellite Center at NASA Research Park in California’s Silicon Valley,” said John Hines, the GeneBox project manager at NASA Ames Research Center where scientists and engineers designed and built GeneBox.*

NASA GeneBox partners include Santa Clara University, Santa Clara, Calif.; Stanford University, Stanford, Calif.; and California Polytechnic University, San Luis Obispo, Calif. Bigelow Aerospace Corporation provided space on its Genesis I test mission for GeneBox.

On July 12, a Russian rocket lofted ‘GeneBox’ into Earth orbit within Bigelow Corporation’s Genesis I test spacecraft. Attached to the large inflatable spacecraft’s internal structure, GeneBox contains a miniature laboratory. In future flights, it will analyze how the near weightlessness of space affects genes in microscopic cells and other small life forms.

“During this mission, we are verifying the new small spacecraft’s systems and our procedures. GeneBox is an example of a low-cost spacecraft model that we hope will provide a short turn-around time for scientists, is responsive to their needs and that we feel will contribute to the Vision for Space Exploration,” Hines said.

The micro-laboratory includes sensors and optical systems that can detect proteins and specific genetic activity. In about two weeks, the Bigelow ground control station in Las Vegas, Nevada, will activate the GeneBox. After the device has executed all of its test functions, the micro-laboratory’s data will be relayed to the ground for further analysis.

“In later flights, when we become fully operational, the micro-laboratory model we are testing today will be housed in micro-satellites, beginning with GeneSats,” Hines said.

NASA is exploring this option as a potential inexpensive platform for conducting fundamental research to understand the mechanisms of bone and muscle loss and weakening of the immune system.

GeneSats will include control of humidified air, pressure and temperature. Light emitting diodes (LEDs) will provide light for analytical sensors that can help scientists detect proteins that have been engineered to glow when they are treated with special chemicals as an indicator of genetic activity.



Gene Sat 1 payload assembly with Chris Beasley in Gene Sat Test and Integration Lab N 240.

According to Hines, the NASA-Bigelow Aerospace collaboration reflects the emerging focus on government and commercial partnerships in entrepreneurial space endeavors. He added that this opportunity on the Bigelow commercial space test mission will provide NASA an early verification of technologies contained in the GeneBox miniature laboratory.

---

## e4Xchange Corporation Obtains CA State Certification

NRP Partner e4Xchange Corporation has been awarded status as a “Certified Small Business “ by the State of California, able to do business as such with various California governmental agencies.

e4Xchange founder and CEO Sam Addala and staff will be happy to give preference to products and services from NRP member companies and affiliates in their pursuit to provide the best solutions to the State of California. Please contact Sam Addala at 650-868-0836 or [sam@e4xchange.com](mailto:sam@e4xchange.com)

## Academic Partners' Upcoming Classes

### Carnegie Mellon West

Carnegie Mellon University (CMU) in Pittsburgh, PA, is a recognized pioneer in the field of software engineering, research and education.

Carnegie Mellon West, located at Building 23 in NASA Research Park, continues CMU's tradition of offering world-class graduate programs in software engineering and management.

In its Software Engineering Masters programs, Carnegie Mellon West offers three tracks - Technical, Development Management, and Program Management. Each provides the appropriate mix of technical and business skills critical to a student's career advancement.

The Technical Track of Carnegie Mellon West's MS program appeals to software developers wanting to advance to a senior developer or architect role. Software developers looking to advance to a technical project or software development management role will find the Development Management Track particularly attractive. Finally, the Program Management Track appeals to senior software developers and managers aiming at a technical director or executive role such as Chief Technology Officer.

Carnegie Mellon West masters programs in Software Engineering and Management are two-year, part-time programs featuring a flexible delivery to accommodate working professionals. Courses are based heavily on projects, studios, simulations, cases, just-in-time lectures and tutorials, and industry practicums.

The overarching goal of Carnegie Mellon West's professional masters program is to provide students with a unique educational experience that transforms them into business-savvy engineers. Carnegie Mellon West's rigorous curriculum is project-centered, team-oriented, and based on a "learn by doing" teaching philosophy. Its distinctive curriculum and expert faculty members prepare students for short-term industry needs and long-term career advancement in the continuously changing environment of Silicon Valley.

We are currently accepting applications for our Fall, 2006 start. For more information on Carnegie Mellon West's MS programs in Software Engineering and Management, please call 650/335-WEST (9374) or visit <http://west.cmu.edu>.

### University of California Silicon Valley Center

UC Santa Cruz Baskin School of Engineering announces a Silicon Valley Graduate-Level Certificate Program in Knowledge Services and Enterprise Management (KSEM).

An Information Session will be held on September 7 @ 6pm, UC Silicon Valley Center, NASA Research Park.

UCSC Baskin School of Engineering faculty will offer KSEM courses at NASA Research Park offering Silicon Valley engineers and IT professionals a unique program for technical management responsibilities in the following areas:

- New product/service development
- Management of technology
- Services management/e-Business
- Global supply and value chain management
- Business intelligence ("dashboard" / "cockpit" design)
- Knowledge management systems; and
- Enterprise systems design and management.

Classes are offered weekday evenings at the University of California's Silicon Valley Center, Bldg. 19, NASA Research Park, adjacent to NASA Ames Research Center.

For more information about KSEM and the fall schedule of classes go to: <http://www.cse.ucsc.edu/programs/ism/ksem>  
The sites anticipated go-live date will be August 28, 2006 or attend the Sept. 7 information session.

### UCSC regularly offers Information System Management (ISM) classes at NRP, Bldg. 19.

**Fall classes begin the week of Sept. 25, 2006.**

ISM 205 - Weds. 6-9 pm <i>Management of Tech. 1</i>	ISM 209 - Tues. 6-9 pm <i>Knowledge Services and Data Analytic</i>
--	---

**Winter '07 proposed schedule, subject to change**

ISM 245 - Weds. 6-9 pm <i>Data Mining</i>	ISM 270 - Tues. 6-9 pm <i>Service Engineering and Management</i>
--	---

ISM 280S - Thurs. 6-7:30 pm  
*Special Topics in Tech. and Information Management*

**Spring '07 proposed classes**

ISM 211e <i>e-Business Tech. and Strategy</i>	ISM 260 <i>Information Retrieval</i>
--	---

Non-matriculated students may enroll via Concurrent Enrollment by visiting the following web-site:  
[www.ucsc-extension.edu/ucsc/generalInfo/enrollment](http://www.ucsc-extension.edu/ucsc/generalInfo/enrollment)

## UNCFSPC

*continued from page 1*

*"United Negro College Fund Special Programs creates bridges of hope and accomplishment through various collaborations. It is exciting to take part in this collaboration, which will offer opportunity and growth," said Cristina Ann Cousart, Program Associate, UNCFSP, head of NSTI-MI at NRP.*

UNCFSP, via this institute, aims to increase research opportunities for faculty and students in NASA-related research, stimulate cross-disciplinary research, improve the transfer of information, ideas and technology, foster R&D management strategies and expertise, and establish educational frameworks and networks that will continue to expand the nation's science and technology base.

The NASA Science and Technology Institute for Minority Institutions serves Historically Black Colleges and Universities, Tribal Colleges and Universities, Hispanic Serving Institutions, and Other Minority Institutions.

Welcome Ms. Cristina Cousart, UNCFSP and the new NASA Science and Technology Institute for Minority Institutions to NASA Research Park!

## All NRP Partners are eligible to use the Ames Child Care Center

The Ames Child Care Center (ACCC) is a non-profit Pre-school and Infant/Toddler center serving children ages 6 weeks to 6 years, with a focus on meeting the individual needs of each child's social, emotional, cognitive, and physical growth and development. The ACCC is accredited by the prestigious National Association for the Education of Young Children (NAEYC).



The new state-of-the-art facility that opened last summer is located just outside the Moffett Main Gate. The ACCC serves approximately 75 families/86 children. We anticipate openings in late Summer/early Fall in the Preschool classrooms (ages 2 to 6) and are currently accepting wait list applications for the Infant and Toddler classrooms.

For more information about our program, please contact: Ames Child Care Center  
650.604.5100  
childcare@mail.arc.nasa.gov  
www.accc.arc.nasa.gov

## Upcoming Events

### NRP Partner Meeting

Thursday, September 28, 2006  
1:00 - 3:30 pm

### NRP Exploration Lecture

TBD - [www.researchpark.arc.nasa.gov/lecture series/lecture.html](http://www.researchpark.arc.nasa.gov/lecture%20series/lecture.html)

### The Value Proposition for Space

*Security, Discovery, Prosperity*

19-21 September 2006, San Jose McEnery Convention Center, San Jose, California



Inspired by Silicon Valley's history of inventive genius from the garage, the Space 2006 conference is pleased to announce the premier of the Space Inventors Fair (SplF). The SplF will provide a unique opportunity to explore cutting-edge, high-tech products

in a number of fields, both in- and outside the space community, against a backdrop of new launch vehicles, spacecraft and commercial space opportunities.

Participants can be located in a cohesive group that will allow for interactive shopping for solutions. Each booth costs \$750. For more information call: (800) 739-4424 or (703) 264-7535 Outside the U.S. | Email: [howardo@aiaa.org](mailto:howardo@aiaa.org)



NASA Ames Research Center



LOCKHEED MARTIN

**SPACE NEWS**

## NRP Post

Editor . . . . . Diane Farrar  
Layout and Design . . . . . Chris Patio

### NRP Post deadlines

Please submit articles to [nrppest@mail.arc.nasa.gov](mailto:nrppest@mail.arc.nasa.gov) on or before Oct 13, 2006 for the Fall issue.

PH: (650) 604-2NRP  
email: [researchpark@mail.arc.nasa.gov](mailto:researchpark@mail.arc.nasa.gov)  
Website: [www.researchpark.arc.nasa.gov](http://www.researchpark.arc.nasa.gov)